The claims are re-printed below for the examiner's convenience.

1. (Original) An RMS-to-DC converter system comprising:

a variable gain amplifier having transfer function ripple that receives an input signal and provides an amplifier output signal;

a detector that receives the amplifier output signal and provides a detector output signal;

an error amplifier that receives the detector output signal and provides an error amplifier output signal having an AC component; and

a feedback circuit coupled to the error amplifier output signal and to the variable gain amplifier for providing a feedback signal to the variable gain amplifier that includes an AC component for reducing transfer function ripple of the RMS-to-DC converter system.

2. (Original) The RMS-to-DC converter system as claimed in claim 1, wherein said detector output signal includes an AC component.

3. (Original) The RMS-to-DC converter system as claimed in claim 1, wherein said error amplifier includes a reference input node for receiving a reference signal including a DC component and an AC component.

4. (Original) The RMS-to-DC converter system as claimed in claim 3, wherein said AC component of said reference signal includes a low frequency sine wave signal.

5. (Original) The RMS-to-DC converter system as claimed in claim 3, wherein said AC component of said reference signal includes noise.

6. (Original) The RMS-to-DC converter system as claimed in claim 1, wherein the error

amplifier output signal is provided to an output node via an RC output circuit.

7. (Original) The RMS-to-DC converter system as claimed in claim 1, wherein said error amplifier includes a capacitor that is selected to contribute to permitting the error amplifier output signal to include an AC component.

8. (Original) The RMS-to-DC converter system as claimed in claim 1, wherein said detector output signal is a current signal.

9. (Original) The RMS-to-DC converter system as claimed in claim 1, wherein said system further includes a reference voltage signal that is applied to a reference RMS circuit for providing at least a squaring and averaging function of said reference voltage signal, said reference voltage signal including an AC component.

10. (Original) The RMS-to-DC converter system as claimed in claim 9, wherein said AC component of said reference voltage signal includes a high frequency sinusoidal signal.

11. (Original) The RMS-to-DC converter system as claimed in claim 9, wherein said AC component of said reference voltage signal includes white noise.

12. (Original) An RMS-to-DC converter system comprising:

a variable gain amplifier having transfer function ripple that receives an input signal and provides an amplifier output signal;

a detector that receives the amplifier output signal and provides a detector output signal;

an error amplifier that receives the detector output signal and a reference signal, and provides an error amplifier output signal having an AC component, said error amplifier including an amplifier feedback circuit between said error amplifier output and an error amplifier input that

receives the detector output signal;

a feedback circuit coupled to the error amplifier output signal and to the variable gain amplifier for providing a feedback signal to the variable gain amplifier that includes an AC component for reducing transfer function ripple of the RMS-to-DC converter system.

13. (Original) The RMS-to-DC converter system as claimed in claim 12, wherein said amplifier feedback circuit includes a relatively low capacitance capacitor having a capacitance of less than about 500 pF.

14. (Original) The RMS-to-DC converter system as claimed in claim 12, wherein said reference signal is a reference voltage signal that is applied to the error amplifier for providing at least a squaring and averaging function of said reference voltage signal.

15. (Original) The RMS-to-DC converter system as claimed in claim 14, wherein said reference voltage signal includes an AC high frequency component.

16. (Original) The RMS-to-DC converter system as claimed in claim 15, wherein said AC component of said reference voltage signal includes noise.

17. (Original) A method providing an RMS-to-DC conversion, said method comprising the steps of:

receiving an input signal and providing an amplifier output signal by a variable gain amplifier having transfer function ripple;

receiving the amplifier output signal and providing a detector output signal;

receiving the detector output signal and providing an error amplifier output signal having an AC component by an error amplifier; and

coupling the error amplifier output signal to the variable gain amplifier for providing a feedback signal to the variable gain amplifier that includes an AC component for reducing transfer function ripple of the RMS-to-DC converter system.

18. (Original) The method as claimed in claim 17, wherein said method further includes the step of providing a reference signal to the error amplifier.

19. (Original) The method as claimed in claim 18, wherein said reference signal includes an AC component.